

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-14 (Canceled).

Claim 15 (New): A manufacturing method of a flat panel display, including joining a substrate which has an electron emitting element, and a faceplate which has a phosphor screen, so that the electron emitting element and the phosphor screen face to each other with a gap, comprising:

at least one of:

(A) treating the faceplate and

(B) treating the substrate,

wherein,

(A) treating the faceplate comprises,

(a) irradiating of electron beam onto the faceplate accommodated in a treatment vessel, while heating the faceplate in a vacuum atmosphere,

(b) forming a getter film on the faceplate, onto which electron beam is irradiated, by means of the vacuum deposition, and

(B) treating the substrate comprises an irradiating of electron beam onto the substrate accommodated in a treatment vessel, while heating the substrate in a vacuum atmosphere;

said method further comprising:

C) assembling the substrate and the faceplate, at least one of which has been irradiated with the electron beam; and

(D) heating and joining the assembled one in a vacuum atmosphere.

Claim 16 (New): The method of claim 15, wherein the faceplate and the substrate are accommodated in the same treatment vessel, both held with a predetermined spacing

distanced, and the electron beam is irradiated onto them alternately or simultaneously from two or more electron sources.

Claim 17 (New): The method of claim 15, wherein the electron beam is irradiated alternately or simultaneously from two or more electron sources, which are disposed in the treatment vessel in at least one of the irradiating of electron beam onto the faceplate and the irradiating of electron beam onto the substrate.

Claim 18 (New): The method of claim 15, wherein the electron beam emitted from the electron source is irradiated, while being deflected, in at least one of the irradiating of electron beam onto the faceplate and the irradiating of electron beam onto the substrate.

Claim 19 (New): The method of claim 15, wherein the electron beam emitted from a planar type of the electron source is irradiated in at least one of the irradiating of electron beam onto the faceplate and the irradiating of electron beam onto the substrate.

Claim 20 (New): The method of claim 15, wherein the electron beam is irradiated in a vacuum atmosphere of which degree of vacuum is maintained at 10^{-3} Torr or less in at least one of the irradiating of electron beam onto the faceplate and the irradiating of electron beam onto the substrate.

Claim 21 (New): The method of claim 15, wherein at least one of the substrate and the faceplate is heated at a temperature in the range from 200 to 400°C in at least one of the irradiating of electron beam onto the faceplate and the irradiating of electron beam onto the substrate.

Claim 22 (New): The method of claim 15, wherein, after the electron beam is irradiated onto at least one of the substrate and the faceplate, the irradiated at least one of the substrate and the faceplate is cooled to a temperature of 100°C or less.

Claim 23 (New): The method of claim 15, wherein the faceplate and the substrate are joined through a supporting frame in a vacuum atmosphere after the electron beam is irradiated onto at least one of faceplate and the substrate in (D) heating and joining.

Claim 24 (New): The method of claim 23, wherein the supporting frame is irradiated with electron beam in the irradiating of electron beam onto the substrate.

Claim 25 (New): A manufacturing equipment of a flat panel display, in which a substrate having an electron emitting element and a faceplate having a phosphor screen, are joined so that the electron emitting element and the phosphor screen face to each other with a gap, comprising:

- (A) a baking and electron beam cleaning chamber;
 - (B) a vapor deposition chamber in which the getter film is formed;
 - (C) an assembly chamber;
 - (D) a heat treatment chamber; and
 - (E) transferring means for transferring and sending at least one of the substrate and the faceplate in and out of the chambers;
- (A) the baking and electron beam cleaning chamber comprising,
- (a) a treatment vessel in which at least one of the substrate and the faceplate is accommodated,
 - (b) exhausting means for evacuating the inside of the treatment vessel to a vacuum atmosphere,
 - (c) irradiating means for irradiating an electron beam onto at least one of the substrate and the faceplate, which are accommodated in the treatment vessel, and
 - (d) means for heating at least one of the substrate and the faceplate, which are accommodated in the treatment vessel;

(B) the vapor deposition chamber comprising,

(a) a treatment vessel in which the faceplate, onto which the electron beam is irradiated, is accommodated, and

(b) means for forming a getter film on the faceplate by means of the vacuum deposition;

(C) the assembly chamber comprising,

(a) a treatment vessel in which the substrate and the faceplate, at least one of which is irradiated with the electron beam, both held with a predetermined spacing distanced, is accommodated, and

(b) exhausting means for evacuating the inside of the treatment vessel to a vacuum atmosphere; and

(D) the heat treatment chamber comprising,

(a) a treatment vessel in which the assembled object is accommodated, and

(b) means for heating and joining the substrate and the faceplate.